

U.S. Patent Application Serial No. **10/508,956**
Response filed September 24, 2008
Reply to OA dated June 4, 2008

REMARKS

Claims 1-4, 6, 7, 9, 16-23, 30, 31 and 33-37 are pending in this application. No amendment is made in this Response. It is believed that this Amendment is fully responsive to the Office Action dated **June 4, 2008**.

Claims 1-4, 6, 7, 9, 16-23 are rejected under 35 U.S.C. §102(b) as being anticipated by Koehler et al. (US 5,917,097). (Office action paragraph no. 2)

The rejection of claims 1-4, 6, 7, 9 and 16-23 is respectfully traversed, and reconsideration is requested.

The present invention provides a liquid vegetable unsaturated alcohol mixture having an iodine value of 88 to 100, a cloud point of less than 7° C and a conjugated diene compound content of 1 wt.% or less. Applicant submits that the Koehler et al. reference does not disclose a composition with these limitations, and that these limitations are not inherently present in the compositions of the reference. Applicant notes the following specific points in this regard:

(1) The Examiner states that "Koehler et al. in Table 3, is silent with regards to conjugated diene content of the unsaturated fatty alcohol produced from palm kernel oil and coconut oil, as such it can be presumed that unsaturated alcohol of Koehler et al, does not contain any conjugated diene." This statement appears to form the "basis in technical reasoning" for the Examiner's contention that the conjugated diene limitation of the present claims is met in Koehler et al.

However, the unsaturated fatty alcohol produced from palm kernel oil can contain conjugated diene compounds.

As is clear from Example 1 in Koehler et al., the fatty alcohol produced from palm kernel oil by fractional distillation contains 3.2% conjugated diene compound, (see the Table in Example 1, at column 4, line 53: "FA C 18 ' ' conj. 3.2% by weight.")

Further, in the present invention, the conjugated diene content is achieved by a slight hydrogenation process. Koehler et al. does not disclose a slight hydrogenation process, and therefore there is no basis for presuming that Koehler et al. could have achieved the conjugated diene content of claim 1.

The term "slight hydrogenation" used herein refers to a procedure in which a conjugated diene moiety is substantially selectively hydrogenated to a monoene moiety; this results in a hydrogenation without an increase in the cloud point (see page 25, lines 13 to 20, of the specification).

Koehler describes a reduction process, but does not describe a "slight hydrogenation" process. Further, as to the reduction process, Koehler states that the double bonds present in the fatty residue are **intact** (see column 4, lines 62-64). Such a reduction is not a "slight hydrogenation."

In Table A below, Applicant summarizes the relationship between the process and the conjugated diene content (wt.%) in the obtained unsaturated alcohol in Examples 1, 2, 4, 5, 6, 29, 30 and 31 of the present specification.

Table A

	process	conjugated diene content (wt.%)
Ex.1	reduction/distillation	6.4
Ex.29	reduction/distillation	3.0
Ex.30	reduction/short slight hydrogenation*/distillation/deodorization	3.1
Ex.31	reduction/slight hydrogenation**/distillation/deodorization	0.8
Ex.5	reduction/slight hydrogenation/distillation/deodorization	0.2
Ex.2	reduction/slight hydrogenation/distillation	0.1
Ex.4	reduction/slight hydrogenation/distillation/deodorization	0.1
Ex.6	reduction/slight hydrogenation/distillation	0.1

* Ex.30: slight hydrogenation for 30 minutes

**Ex.31: slight hydrogenation for 2 hours

As is clear from Table A, the only examples producing a liquid alcohol mixture having a conjugated diene compound content of 1 wt.% or less are Examples 31, 5, 2, 4, and 6, which carried out slight hydrogenation.

In other words, slight hydrogenation is important to produce a liquid alcohol mixture having an iodine value of 88 to 100 and a conjugated diene compound content of 1 wt.% or less. Again,

Koehler et al. does not disclose such a process, and there is no basis in technical reasoning for concluding that the iodine value and conjugated diene content limitations of claim 1 would be inherent in Koehler et al.

(2) Furthermore, Koehler fails to disclose the cloud point limitation of claim 1.

The Examiner cites Koehler et al. as disclosing an alcohol having a solidification point of 7 °C. However, **solidification point and cloud point are different parameters.**

The cloud point of a fluid is the temperature at which at least one dissolved solid is no longer completely soluble, precipitating as a second phase and giving the fluid a cloudy appearance. Comparatively, the solidification point is the lowest temperature at which a fluid still behaves like a fluid.

Because the parameters of cloud point and solidification point differ, the cloud point value cannot be said to indicate the solidification point value. Therefore, Koehler et al. does **not** disclose the cloud point limitation of claim 1.

Furthermore, in the present invention, the cloud point limitation is achieved by a particular composition of the catalyst. Koehler et al. merely teaches the use of a Cu/Cr/Zn and/or Cu/Cr/Cd mixed oxide catalyst. Koehler fails to disclose the copper content in the catalyst, which is important to control the cloud point of the unsaturated alcohol.

The importance of this parameter may be seen from a comparison of Example 1 and Comparative Example 1 of the specification, which differ only in the copper content in the catalyst.

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Example 1, which used a zinc-type catalyst having a copper content of 5 ppm, produced an unsaturated alcohol mixture with a cloud point of 4.1 °C.

Comparatively, Comparative Example 1, which uses a zinc-type catalyst having a copper content of 78 ppm, produced an unsaturated alcohol mixture with a cloud point of 10 °C.

That is, in order to produce an alcohol mixture in the present invention having an iodine value of 88 to 100, a cloud point of less than 7 °C and a conjugated diene compound content of 1 wt.% or less, a slight hydrogenation step and the copper content in the catalyst are important. Since Koehler et al. does not disclose a slight hydrogenation step and this copper content, there is no basis in technical reasoning for concluding that Koehler's compositions would inherently meet the limitations of claim 1.

To summarize, there is no basis in fact and/or technical reasoning for an assertion that the compositions of Koehler et al. would inherently meet the limitations of claim 1, and the present claims are not anticipated by Koehler et al.


If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicants' undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

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In the event that this paper is not timely filed, the applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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Enclosure: Petition for Extension of Time

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